ProDOS 8
#15: How ProDOS 8 Treats Slot 3

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This Technical Note describes how ProDOS 8 reacts to non-Apple 80-column cards in slot 3 and how it identifies them.

The *ProDOS 8 Update Manual* now documents much of the information which was originally covered in this Note about how ProDOS 8 reacts to non-Apple 80-column cards in slot 3. However, since there is still some confusion on the issue, we summarize it again in this Note.

On an Apple][+, ProDOS 8 considers the following four Pascal 1.1 protocol ID bytes sufficient to identify a card in slot 3 as an 80-column card and mark the corresponding bit in the `MACHID` byte: $C305 = $38, $C307 = $18, $C30B = $01, $C30C = $8x, where x represents the card's own ID value and is not checked. On any other Apple II, the following fifth ID byte must also match: $C3FA = $2C. This fifth ID byte assures ProDOS 8 that the card supports interrupts on an Apple IIe. Unless ProDOS 8 finds all five ID bytes in an Apple IIe or later, it will not identify the card as an 80-column card and will enable the built-in 80-column firmware instead. In an Apple IIc or IIGS, the internal firmware always matches these five bytes (see below).

If you are designing an 80-column card and wish to meet these requirements, you must follow certain other considerations as well as matching the five identification bytes; the *ProDOS 8 Update Manual* enumerates these other considerations.

The *ProDOS 8 Update Manual* notes that an Apple IIGS does not switch in the 80-column firmware if it is not selected in the Control Panel. However, due to a bug in ProDOS 8 versions 1.6 and earlier, it switches in the 80-column firmware unconditionally. ProDOS 8 cannot respect the Control Panel setting for 80-column firmware in certain situations; it cannot operate in a 128K machine in a 128K configuration (including /RAM) without the presence of the 80-column firmware, since it must utilize the extra 64K. This is just one of the reasons ProDOS 8 does not recognize a card in slot 3 if it is not an 80-column card, as outlined above.

With ProDOS 8 version 1.7 and later, an Apple IIGS behaves exactly like an Apple IIe with respect to slot 3. If a card is slot 3 is selected in the Control Panel, ProDOS 8 ignores it in favor of the built-in 80-column firmware—unless the card matches the five identification bytes listed above. This works the same on a Apple IIe.

Further Reference

- *ProDOS 8 Technical Reference Manual*
- *ProDOS 8 Update Manual*
- ProDOS 8 Technical Note #11, The ProDOS 8 MACHID Byte